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Design and development of multipurpose educational and research platform (MERP) for learning control and iot technologies (Article)

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Abstract

Vision TN50 “Transformasi Nasional 2050” is encouraging institutions to produce more talent for digitalization and transformation of Industries. This transformation opens a new domain for the Internet of Things (IoT) technologies. Therefore, students are required to develop their skills and knowledge in the field of advanced automation and robotics. There are many automation or control labs available in the educational institutions that are not equipped with advanced automation, which are required for the Internet of Things (IoT) technologies. This paper presents the design and development of a Multipurpose Educational and Research Platform (MERP) for learning IoT automation technologies. To develop a MERP, four requirements are outlined in this paper; (i) industrial standard controller to be used (ii) integration of the platform with the cloud computing (iii) develop a low-cost platform (iv) suitable for Industrial and Enterprise applications prototyping. To analyse the impact of MERP, students experience is evaluated on this developed platform in International Islamic University Malaysia (IIUM). The evaluation result shows the enormous improvement in student’s skills in term of learning new control technologies, especially the Internet of Things (IoT). The proposed platform leverage students to design, control and develop IoT application that is in line with the industry 4.0. © School of Engineering, Taylor’s University.

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